

WHAT IS CLAIMED IS:

1. A hollow golf club head made of metal comprising:  
a face portion;  
5 a sole portion;  
a side portion; and  
a crown portion,

wherein a metal material forming the crown portion has  
a lowest Young's modulus.

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2. The golf club head according to claim 1, wherein  
at least the crown portion is press-molded separately from  
other portions and joined to the other portions.

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3. The golf club head according to claim 1, wherein  
the crown portion has thickness in a range of from 0.5 mm to  
1.2 mm.

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4. The golf club head according to claim 1,  
wherein the metal forming the golf club head includes  
at least one of titanium and titanium alloy;

wherein the crown portion has a Young's modulus not  
higher than 10,500 kgf/mm<sup>2</sup>; and

- wherein the sole portion has a Young's modulus not lower  
25 than 11,000 kgf/mm<sup>2</sup>.

5. The golf club head according to claim 1,  
wherein difference between Young's modulus of the crown  
portion and that of the sole portion is in a range of from 1,000  
5 kgf/mm<sup>2</sup> to 3,000 kgf/mm<sup>2</sup>

6. The golf club head according to claim 1, wherein  
a rolled direction of the metal material forming the crown  
portion has an angle at in a range of 80° to 100° with respect  
10 to the face portion.

7. The golf club head according to claim 1, wherein  
the face portion has height in a range of from 45 mm to 100  
mm.

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8. The golf club head according to claim 1, wherein  
weight of the golf club head is in a range of from 165 g to  
205 g.

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9. The golf club head according to claim 1, wherein  
a metal material forming the sole portion has the highest  
Young's modulus.

10. The golf club head according to claim 1, wherein  
25 a rib is formed on the sole portion from a face side thereof

toward a back side thereof.

11. A hollow golf club head made of metal comprising:

a face portion;

5     a sole portion;

a side portion; and

a crown portion, which is not subjected to heat  
treatment,

wherein the portions other than the crown portion are  
10     welded and are subjected to heat treatment, and then the  
portions and the crown portion are welded.

12. The golf club head according to claim 11, wherein  
each of face, sole, side, and crown portions is press-molded.

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13. The golf club head according to claim 11, further  
comprising a hosel portion,

wherein the face, sole, side, and crown portions are  
formed from a titanium alloy plate by press-molding;

20     wherein the hosel portion is formed by punching a  
titanium alloy stick.

14. The golf club head according to claim 11, further  
comprising a hosel portion,

25     • wherein the sole, side, and hosel portions are integrally

formed by casting.

15. The golf club head according to claim 11, wherein at least the crown portion is made of  $\beta$  type titanium alloy.

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16. A method for manufacturing A hollow golf club head made of metal including a face portion, a sole portion, a side portion, and a crown portion, the method comprising the steps of:

10 welding the portions other than the crown portion;  
heat-treating the portions; and  
welding the portions and the crown portion, which is not subjected to a heat treatment.

15 17. The method according to claim 16, further comprising the steps of press-molding each of face, sole, side, and crown portions.

18. The method according to claim 16, in which the golf club head further including a hosel portion, the method further comprising the steps of:

press-molding a titanium alloy to form the face, sole, side, and crown portions; and

20 punching a titanium alloy stick to form the hosel  
25 portion.

19. The method according to claim 16, in which the golf club further including a hosel portion, the method further comprising the steps of integrally casting the sole, side, and  
5 hosel portions.

20. The method according to claim 16, wherein at least the crown portion is made of  $\beta$  type titanium alloy.